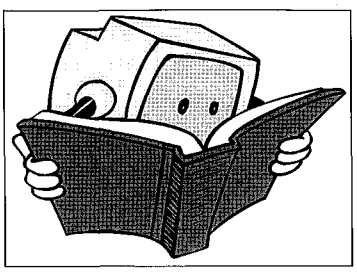
HITACHI



C2156TN
C2556TN
C2856TN
CL2156TAN
CL2556TAN
CL2856TAN
CP2156TA
CP2556TA
CP2856TA
CP2156TAN
CP2556TAN
CP2856TAN
C2186TN
C2586TN
C2886TN
CL2586TAN
CL2886TAN
CP2886TAN
C24W1TN
C28W1TN
C28WD2TN
CS2WD2TN
CP2886TAN
CL28W1TAN
CL28WD2TAN
CL32WD2TAN
CP28WD2TAN
CP32WD2TAN
CL24W1TAN

CAUTION:

Before servicing this chassis, it is important that the service technician read the "Safety Precautions" and "Product Safety Notices" in this service manual.

ATTENTION:

Avant d'effectuer l'entretien du châssis, le technicien doit lire les "Précautions de sécurité" et les "Notices de sécurité du produit" présentés dans le présent manuel.

VORSICHT:

Vor Öffnen des Gehäuses hat der Service-Ingenieur die "Sicherheitshinweise" und "Hinweise zur Produktsicherheit" in diesem Wartungshandbuch zu lesen.

Data contained within this Service manual is subject to alteration for improvement.

Les données fournies dans le présent manuel d'entretien peuvent faire l'objet de modifications en vue de perfectionner le produit.

Die in diesem Wartungshandbuch enthaltenen Spezifikationen können sich zwecks Verbesserungen ändern.

TECHNICAL SPECIFICATIONS

TV Standard . . 625 lines, STANDARD I (UK) B/G/H, L/L', (Export)

Channel coverage . . UHF Channels (UK) UHF/VHF Hyper band (Export)

Aerial input impedance . . .75 ohm unbalanced

Programme Selectors .Channel UP/DOWN buttons with 60 programme remote control CH direct input Frequency direct input

Power Consumption	Picture tubes
2156 . . 90W	51 cm Type
2556 .. 97W	59 cm Type
2856 . . 98W	66 cm Type
2186 .. ..91W	51 cm Type
2586 .98W	59 cm Type
2886 99W	66 cm Type
24W. 100W	56 cm Type
28W.. .. . .120W	66 cm Type
24WD 100W	56 cm Type
28WD 120W	66 cm Type
32WD 130W	76 cm Type

Standby Power Consumption . ... <7W

Mains Voltage . . .220V/240V 50 Hz

Fuse . ... T4.0A Type

Focusing ... . Electro static

SPÉCIFICATIONS TECHNIQUES

Standard TV . . . . 625 lignes, STANDARD R-U B/G/H. L/L': (Export)

Couverture de canaux . . .Canaux UHF (R-U) UHF/VHF Band hyper (Export)

Impédance d'entrée d'antenne . .. .. 75 ohms non équilibrée

Sélecteurs de programmes ... .Touches de sélection de canaux HAUT/BAS avec 60 programmes Télécommande Entrée directe canal (CH) Entrée directe fréquence

Consommation électrique	Tubes-images
2156 ... .. 90W	Type 51 cm
2556 97W	Type 59 cm
2856 ... . . 98W	Type 66 cm
2186 91W	Type 51 cm
2586 .... . 98W	Type 59 cm
2886 ... ..99W	Type 66 cm
24W 100W	Type 56 cm
28W . 120W	Type 66 cm
24WD 100W	Type 56 cm
28WD 120W	Type 66 cm
32WD 130W	Type 76 cm

Consommation en mode veille . . . <7W

Tension secteur . .. . 220V/240V 50 Hz

Fusible . . . . Type T4 0A

Mise au point .. . . Electrostatique

SPECIFICATIONS TECHNIQUES

Fernsehnorm . . ...625 Zeilen, Fernsehnorm I (nur GB) Fernsehnorm B/G/H, L/L

Kanäle . . ..UHF-Bereich (GB) UHF-/VHF-/Hyperband-Bereich (Export)

Antenneneingangsimpedanz ... . .75 Ohm unsymmetrisch

Senderwahl. . . ..AUF/AB-Taste auf Fernbedienung für 60 Sender Senderdirekteingabe Frequenzdirekteingabe

Leistungsaufnahme	Bildröhre
2156 . . . . 90W	51 cm Type
2556 . . .97W	59 cm Type
2856. . . 98W	66 cm Type
2186 91W	51 cm Type
2586 . . ..98W	59 cm Type
2886 . .. 99W	66 cm Type
24W . 100W	56 cm Type
28W ..120W	66 cm Type
24WD . 100W	56 cm Type
28WD ... 120W	66 cm Type
32WD . . .130W	76 cm Type

Leistungsaufnahme im Standby-Modus ... <7W

Netzspannung . . ..220 V - 240 V, 50 Hz

Sicherung T4 0A

Fokusierung . . Elektrostatisch

SAFETY PRECAUTIONS

WARNING: The following precautions should be observed.

1. Do not install, remove, or handle the picture tube in any manner unless shatter proof goggles are worn. People not so equipped should be kept away while picture tubes are handled. Keep the picture tube away from the body while handling.

2. When service is required, an isolation transformer should be inserted between the power line and the receiver before any service is performed on the chassis.

3. When replacing the chassis in the cabinet, ensure all the protective devices are put back in place.

4. When service is required, observe the original lead dressing. Extra precaution should be taken to ensure correct lead dressing in the high voltage circuitry area.

5. Always use the manufacturer's replacement component. Always replace original spacers and maintain lead lengths. Especially critical components are indicated thus ⚠ on the parts list and should not be replaced by other makes. Furthermore, where a short circuit has occurred, replace those components that indicate evidence of overheating.

6. Before returning a serviced receiver to the customer, the service technician must thoroughly test the unit to be certain that it is completely safe to operate without danger of electrical shock, and be sure that no protective device built into the instrument by the manufacturer has become defective, or inadvertently damaged during servicing.

Therefore, the following checks are recommended for the continued protection of the customers and service technicians.

INSULATION

Insulation resistance should not be less than 10M ohms at 500V DC between the main poles and any accessible metal parts.

Also, no flashover or breakdown should occur during the dielectric strength test, applying 3kV AC or 4.25kV DC for two seconds between the main poles and accessible metal parts.

HIGH VOLTAGE

High voltage should always be kept at the rated value of the chassis and no higher. Operating at higher voltages may cause a failure of the picture tube or high voltage supply, and also, under certain circumstances could produce X-radiation levels moderately in excess of design levels. The high voltage must not, under any circumstances, exceed 29kV on the chassis.

X-RADIATION

TUBES: The primary source of X-radiation in this receiver is the picture tube. The tube utilised for the above mentioned function in this chassis is specially constructed to limit X-radiation.

For continued X-radiation protection, replace tube with the same type as the original HITACHI approved type.

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in HITACHI television receivers have special safety related characteristics. These characteristics are often not evident from visual inspection, nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified by marking with a ⚠ on the schematics and the replacement parts list contained in this service manual.

The use of a substitute replacement component which does not have the same safety characteristics as the HITACHI recommended replacement one, shown in the parts list of this service manual, may create electrical shock, fire, X-radiation, or other hazards.

Product Safety is continuously under review, and new instructions are issued from time to time. For the latest information, always consult the current HITACHI service manual. A subscription to, or additional copies of HITACHI service manuals may be obtained at a nominal charge from your HITACHI SALES CORPORATION.

CE MARK

Some of these models may contain the CE mark on the rating plate.

This illustrates that the T.V. contains parts that have been specifically approved to provide electromagnetic compatability to designated levels.

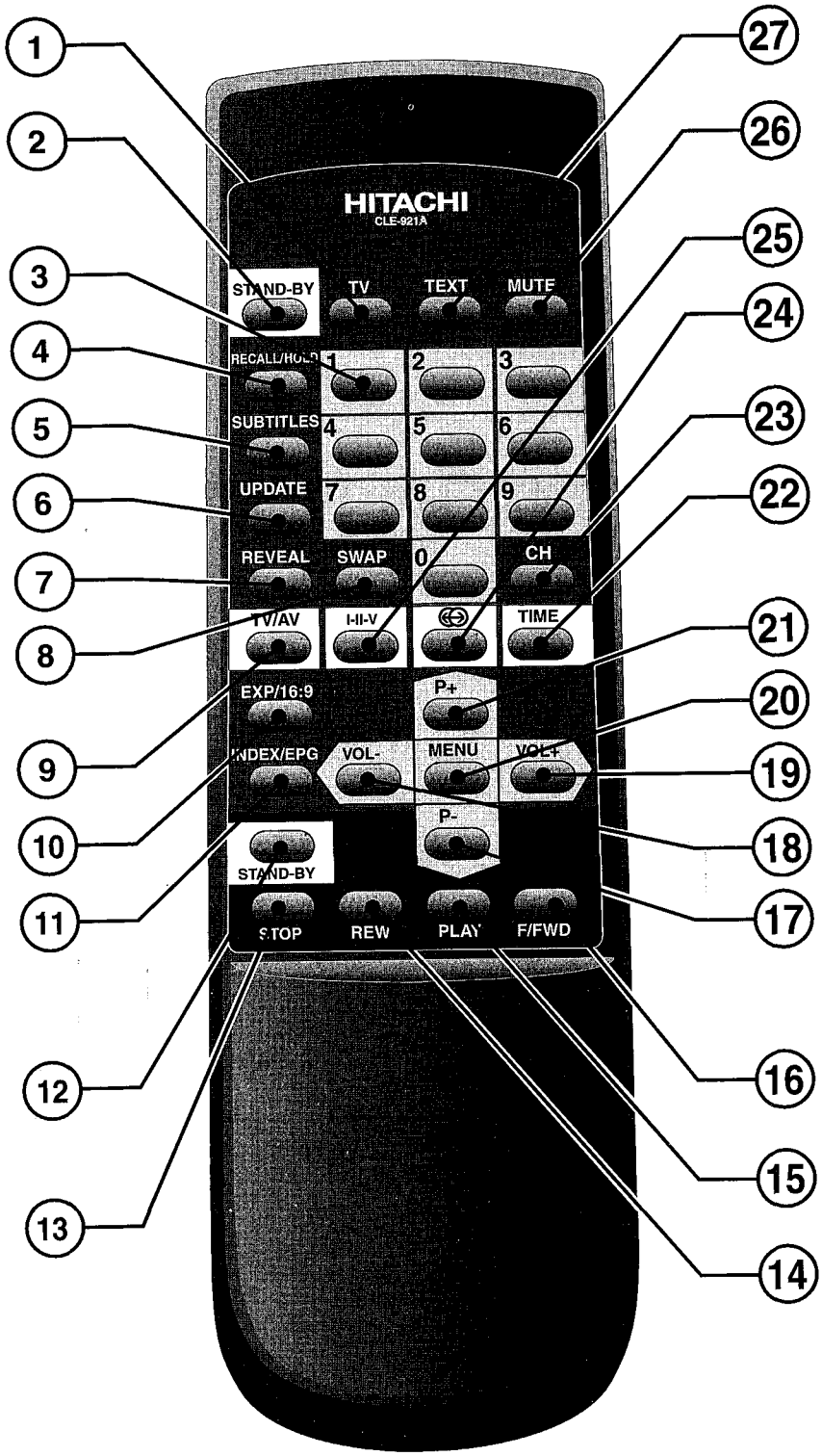
Therefore, when replacing any part in this T.V., please use only the correct part itemized in the parts list of this service manual to ensure this standard is maintained.

Also, take care to replace lead dressing to its original state, as this can also have a bearing on the electromagnetic radiation/immunity.

TUBE DISCHARGE

The line output stage can develop voltages in excess of 25kV; if the E.H.T. cap is required to be removed, discharge the anode to chassis via a high value resistor, prior to its removal from the tube.

Handset Layout



NOTE: SOME MODELS ARE SUPPLIED WITH A DIFFERENT STYLE HANDSET, HOWEVER FUNCTIONALITY REMAINS THE SAME.

NOTE: Make sure the Handset foldout section (Page 3) is extended out for easy referencing.
To automatically tune this TV to your local broadcasting stations follow the step by step guide below. Once the TV has found all your local stations, then they are automatically assigned into the following order: ***1.BBC1; 2: BBC2; 3: ITV; 4:CH4/S4C; 5: CH5 (subject to availability); 6: Satellite.***
Alternatively, if you are familiar with local broadcasting frequency or CH numbers, then these can be entered manually. Please refer to the Manual Tuning Procedure section of this booklet.

IMPORTANT NOTE: If you have a VCR or a Satellite receiver connected to this TV please ensure that they are switched on before Autotune commences. In the case of a VCR, insert a pre-recorded tape and begin playback of your equipment. With a Satellite receiver, select SKY NEWS. These measures ensure that all your equipment is tuned in during the AUTO-TUNE procedure. (Satellite equipment installation is explained on Page 22 and 23).

Press and HOLD the MENU key (20) on your handset until the menu right (top) appears.

To ensure the INSTALL option is displayed the MENU key (20) must be held for approximately 5 seconds.

Highlight INSTALL using cursor keys 17 or 21 (if INSTALL is not shown follow step above once more).

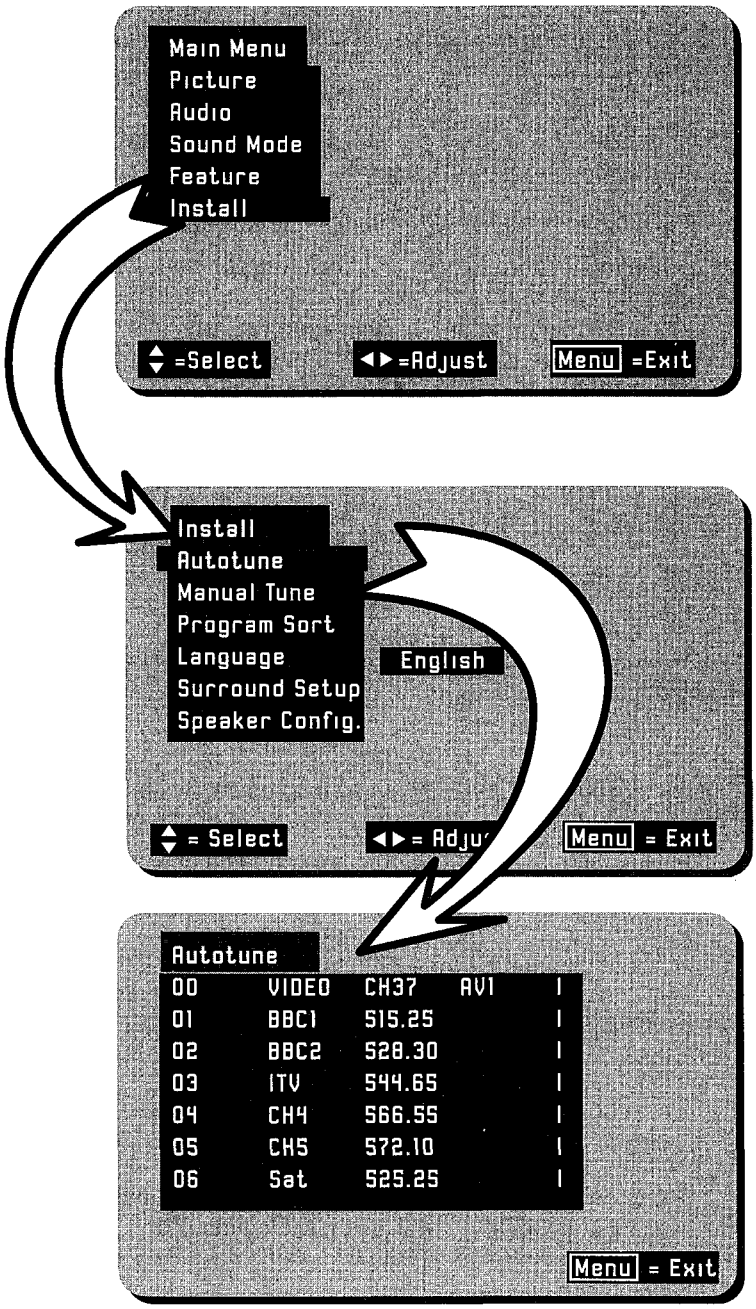
Press cursor key 18 or 19 to select INSTALL. The INSTALL menu (centre right) is shown.

If language setting is incorrect, use cursor keys 17 or 21 to highlight LANGUAGE, and select using cursor keys 18 and 19.

Use cursor key 17 or 21 to highlight AUTOTUNE.

Use either cursor key 18 or 19 to begin AUTOTUNE.

S600061-01-01



Completed Autotune example.

Program Sort

The PROGRAM SORT menu allows the user to swap programme numbers from one location to another. If necessary follow the steps below.

S600062-01-01

Press and HOLD the MENU key (20) until Main Menu with INSTALL is shown (top right).

Use cursor key 17 or 21 to select INSTALL and press cursor key 18 or 19 to enter

Use cursor key 17 or 21 to select PROGRAM SORT and press cursor key 18 or 19 to enter

The PROGRAM SORT menu is displayed.

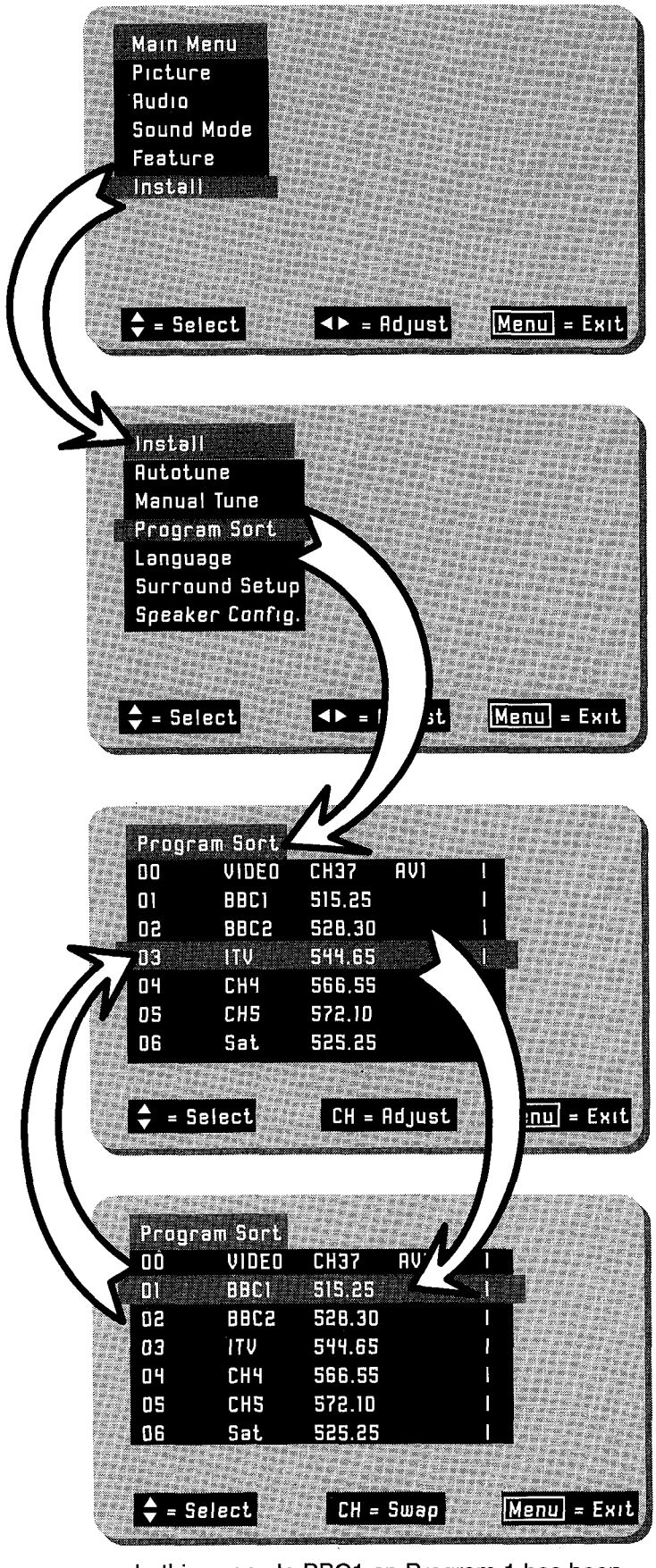
Use cursor key 17 or 21 to highlight Program to change (example shows Program 3 ITV)

Press CH key (23) to select [select bar turns RED in colour]

Use cursor key 17 or 21 to highlight Program to be replaced (example shows Program 1 BBC1)

Once highlighted press CH key once more to confirm selection [select bar returns to BLUE]

Repeat above to swap other programs, or repeatedly press MENU key 20 to return to TV operation.



In this example BBC1 on Program 1 has been selected so that it may be swapped with Program 3 (ITV).

Manual Tuning Procedure

If desired, you may manually tune this TV. There are several methods of Manual Tuning, these include Search Tuning / Fine Tuning and Frequency or CH manual input (this requires you to know your local broadcasting frequency or CH number). This section will also deal with items such as assigning AV sockets to program numbers and Program Naming.

Search Tuning / Fine Tuning

This section deals with locating broadcasting stations using the Search Tuning and combined Fine Tuning facility. Fine Tuning may be required after Search or Automatic Tuning is complete.

S600063-01-01

Press and HOLD the MENU key (20) on your handset. The Main Menu (top right) is displayed.

Select INSTALL and press cursor keys 18 and 19 to enter. The INSTALL menu is displayed.

Select Manual Tune and press cursor keys 18 or 19 to enter Manual Tune menu.

The Manual Tune menu is displayed (bottom right).

Use cursor keys 17/18/19 and 21 to highlight frequency bar of programme Nº to Search Tune.

Press CH key (23) to select [bar turns RED] and press cursor keys 18/19 to begin SEARCH TUNE.

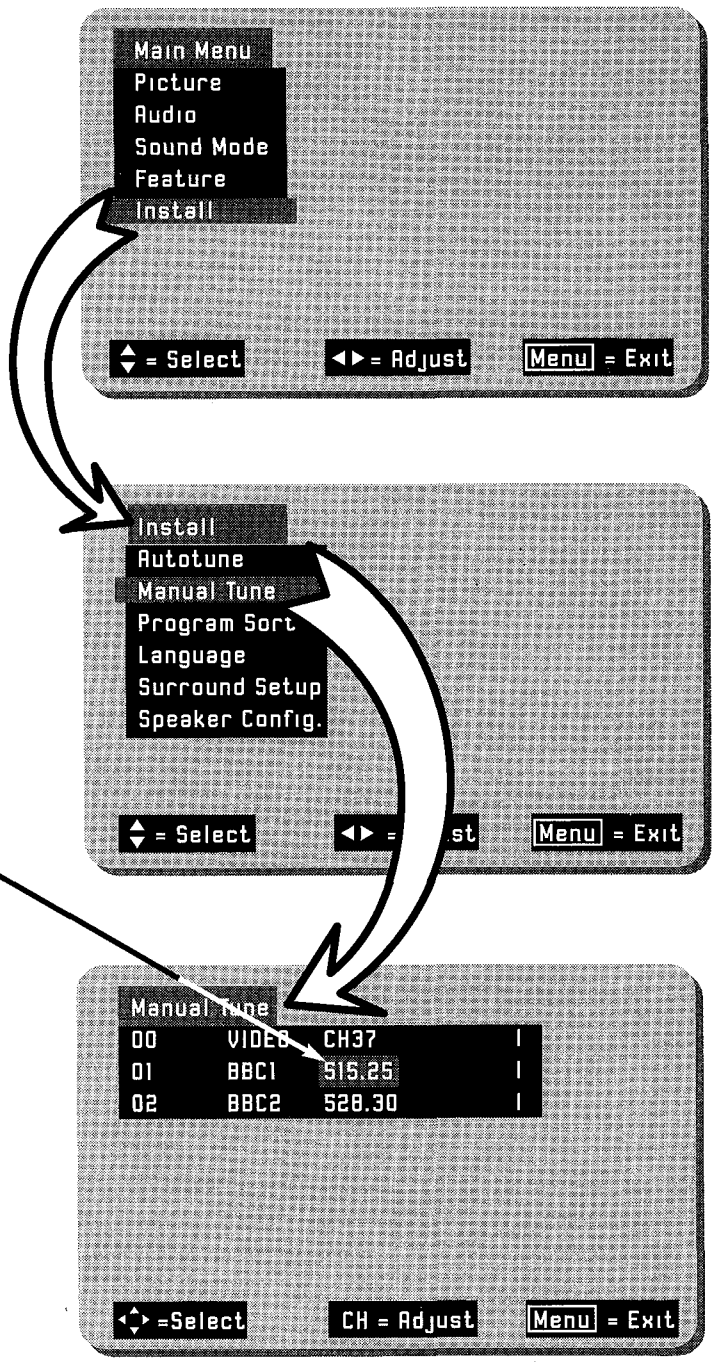
When a broadcast is found either repeatedly press the MENU key (20) to store and exit to TV

OR

To continue Search Tune simply press cursor keys 18/19, the TV will start searching once more.

To FINE TUNE press cursor keys 17 or 21 until the picture becomes clear.

When complete repeatedly press the MENU key (20) to exit, or repeat above to Search/Fine Tune other program numbers if necessary.



Manual Tuning cont.

Entering Known Frequencies

Broadcasting stations transmit the signal to your TV on a particular defined frequency i.e. 525.25MHz. These frequencies can be entered manually if known, and you can obtain this information by calling your local operator. In addition to frequency transmission a corresponding CHANNEL Nº is also used e.g. CH34, and this too can be directly input to your TV if known. (The S-- number has no function on this TV).

Press and HOLD MENU key (20) and select INSTALL. Select MANUAL TUNE from INSTALL menu.

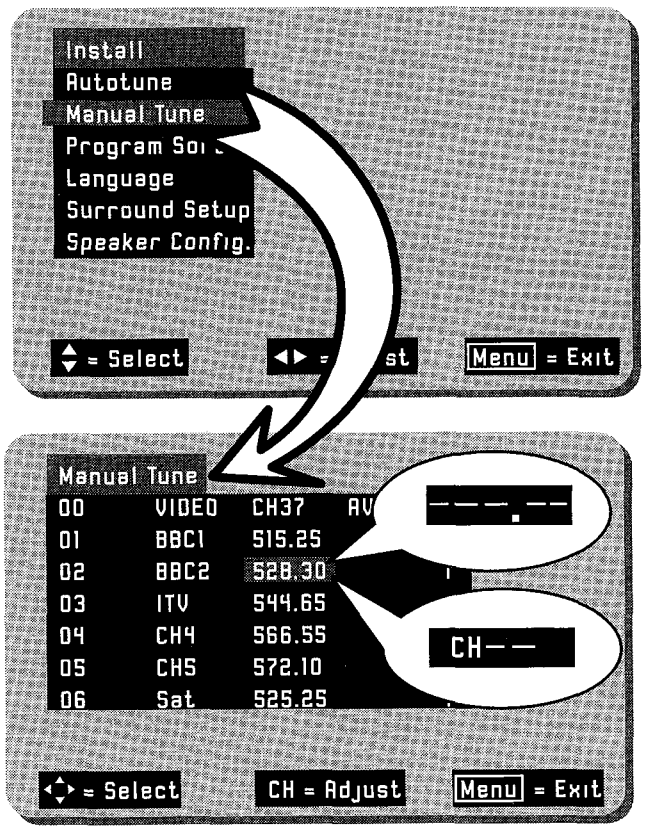
Use cursor keys 17,18, 19 or 21 to highlight the frequency of the program number you wish to enter.

Press the CH key (23) on your handset once, the column changes RED to indicate selection.

Repeatedly press CH key to select CH- - or ---.--, and enter the known number using 0-9 keys.

Once the number has been entered, press the MENU key once more and the display turns BLUE. This is now stored. Press MENU to exit.

S600064-01-01



Assigning AV Prog. Nºs

When AV sockets are commonly used, for example, if you view camcorder recorded events frequently, then we suggest assigning a dedicated program number on your TV. This can be any program number that has not already been assigned. Follow the step by step guide below.

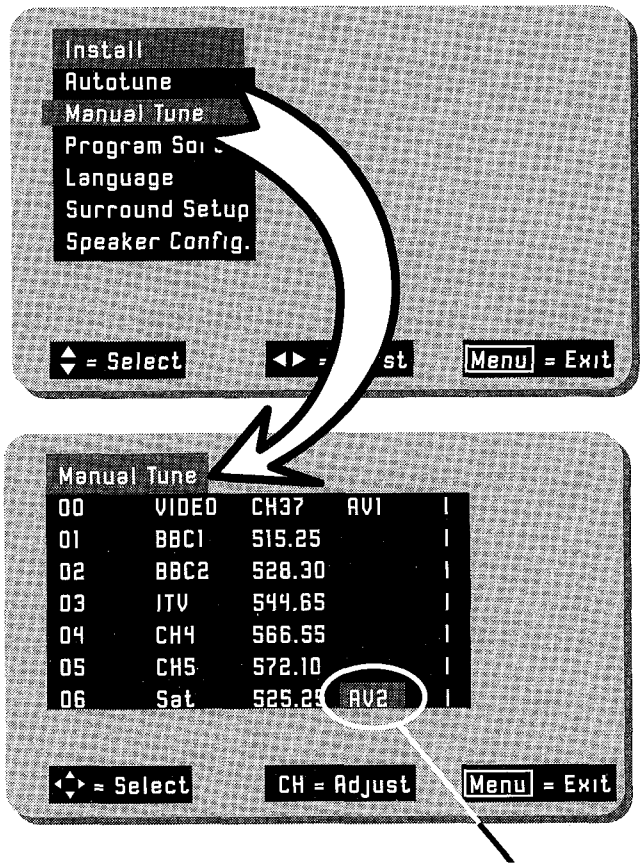
Press and HOLD MENU key (20) and select INSTALL. Select MANUAL TUNE from INSTALL menu.

Use cursor keys 17,18, 19 or 21 to highlight the AV column of the program number you wish to assign.

Once highlighted press the CH key (23) and select between each AV mode using cursor keys 18 or 19.

Repeat above to enter other AV sockets or repeatedly press MENU key (20) to store and exit to TV mode.

S600065-01-01



AV2 assigned to Program 6

Program Naming After Tuning in, most broadcasting station names appear on screen i.e. BBC1, BBC2, ITV etc.. However, you may change or add program names whenever you desire. To add or change program names follow the simple step by step guide below.

S600066-01-01

Press and HOLD MENU key (20) and select INSTALL. Select MANUAL TUNE from INSTALL menu.

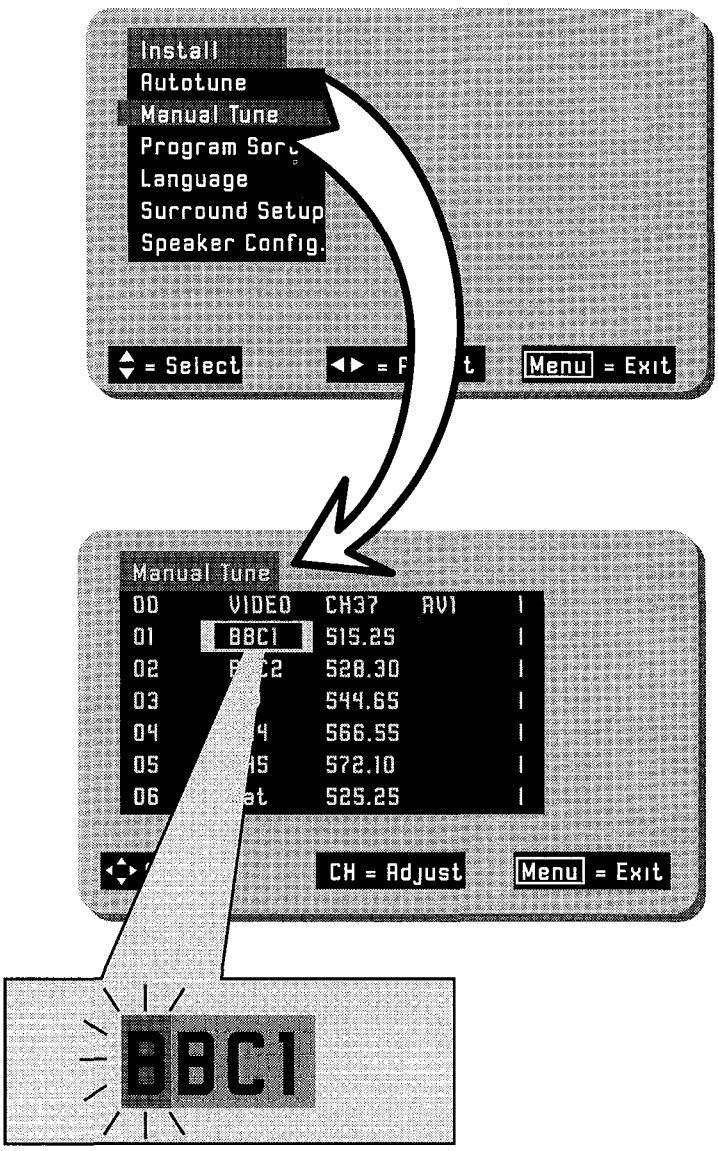
Use cursor keys 17,18, 19 or 21 to highlight the Program Name you wish to assign or change.

Press the CH key (23) [the first digit will blink], now use cursor keys 17/21 to scroll through all the characters.

Once the first character has been entered select next digit using cursor key 19 and repeat above step.

You may use up to 5 characters for any one Programme Name. Press MENU key (20) to store.

Repeat above steps to assign other Program Names or repeatedly press MENU key (20) to exit to TV mode.



When selected the character will blink on and off.

Picture and Audio Controls

Picture settings are controlled via the TV's on board Menu system. These levels have already been preset at the factory and should require no adjustment. However, your personal viewing preferences may vary from these settings and alteration should be performed as follows:-

S600067-01-01

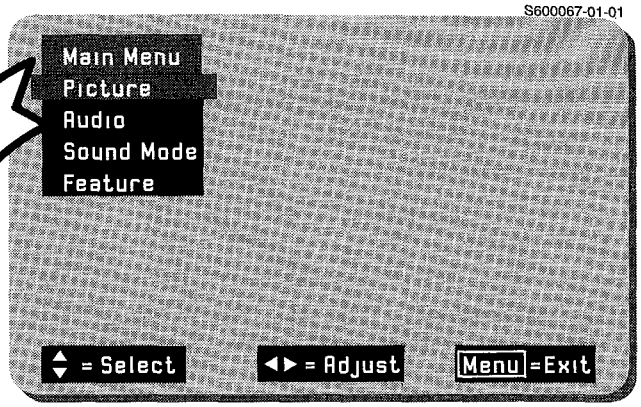
Press the MENU key 20 on your handset. The Main Menu is displayed.

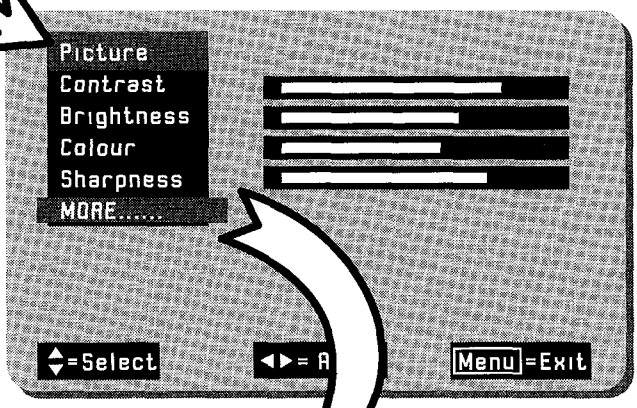
Use RED colour coded key (9) to select PICTURE
(or use cursor keys 17/21 to select and key 18 or 19 to enter)

The PICTURE menu (middle right) is displayed.

Highlight the control to be adjusted using cursor keys 17 or 21 and adjust with keys 18/19.

Adjust other controls if necessary, or repeatedly press MENU button (key 20) to exit

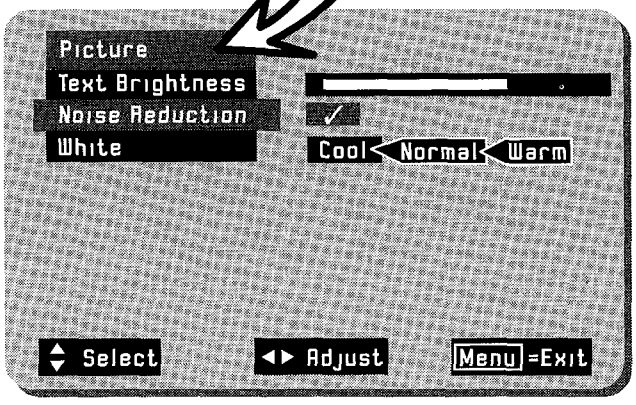




Picture Menu

To obtain the MORE sub menu highlight MORE and press cursor keys 18 or 19 to enter.

Select and adjust controls as necessary, once complete press MENU button (key 20) to exit



Picture Sub Menu

Function Controls

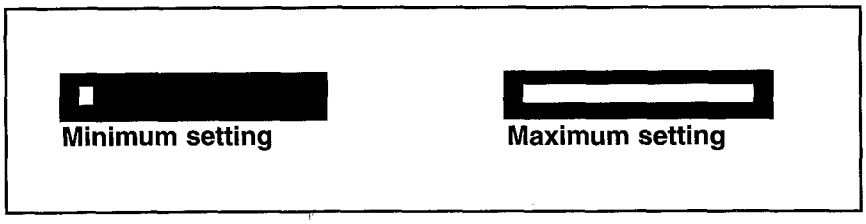
CONTRAST:

BRIGHTNESS:

COLOUR:

SHARPNESS:

***HUE:**



*(Hue control appears on-screen only if an NTSC signal is received via the AV sockets).

More Functions

TEXT BRIGHTNESS : This function allows the user to adjust the text brightness of On Screen Display windows and Teletext pages.

NOISE REDUCTION :Noise Reduction improves picture quality when a signal becomes weak or when viewing poorly recorded VCR tapes. When selected a ✓ is displayed.

WHITE: This feature controls the colour temperature displayed on the picture tube.

The Sound Menu is accessed via the TV's on-board MENU system, and allows the user to control such features as Volume, Bass, Treble, Balance and Bass Boost. These settings have already been preset at the factory, however, your personal listening tastes may differ from those set. Please follow the guide below for adjustment and setting.

Press the MENU key 20 on your handset. The Main Menu is displayed.

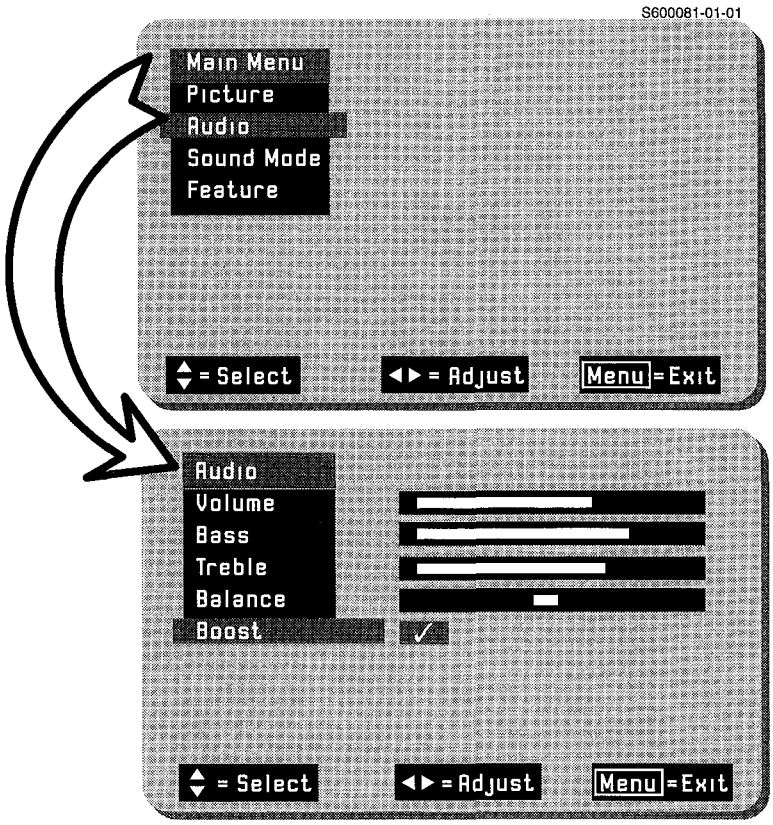
Use GREEN colour coded key (25) to select AUDIO (or use keys 17/21 to select and key 18 or 19 to enter)

The AUDIO menu is displayed (bottom right).

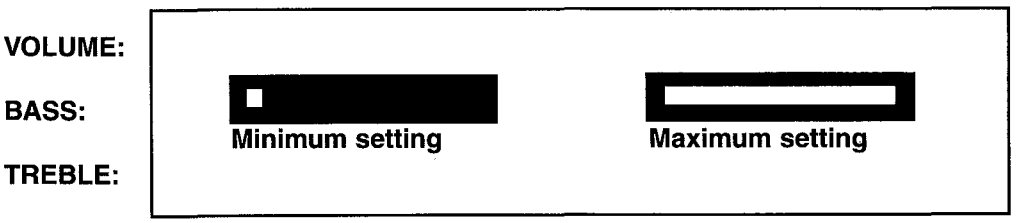
Highlight the control to be adjusted using keys 17 or 21 *(example shows Bass Boost).*

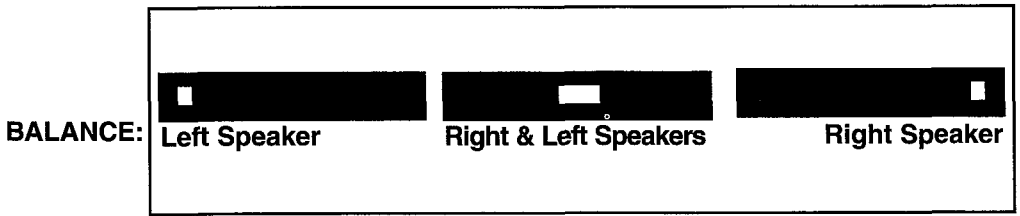
Adjust the particular control using keys 18 or 19

Adjust other controls if necessary, or repeatedly press MENU (20) to exit.



Function Controls





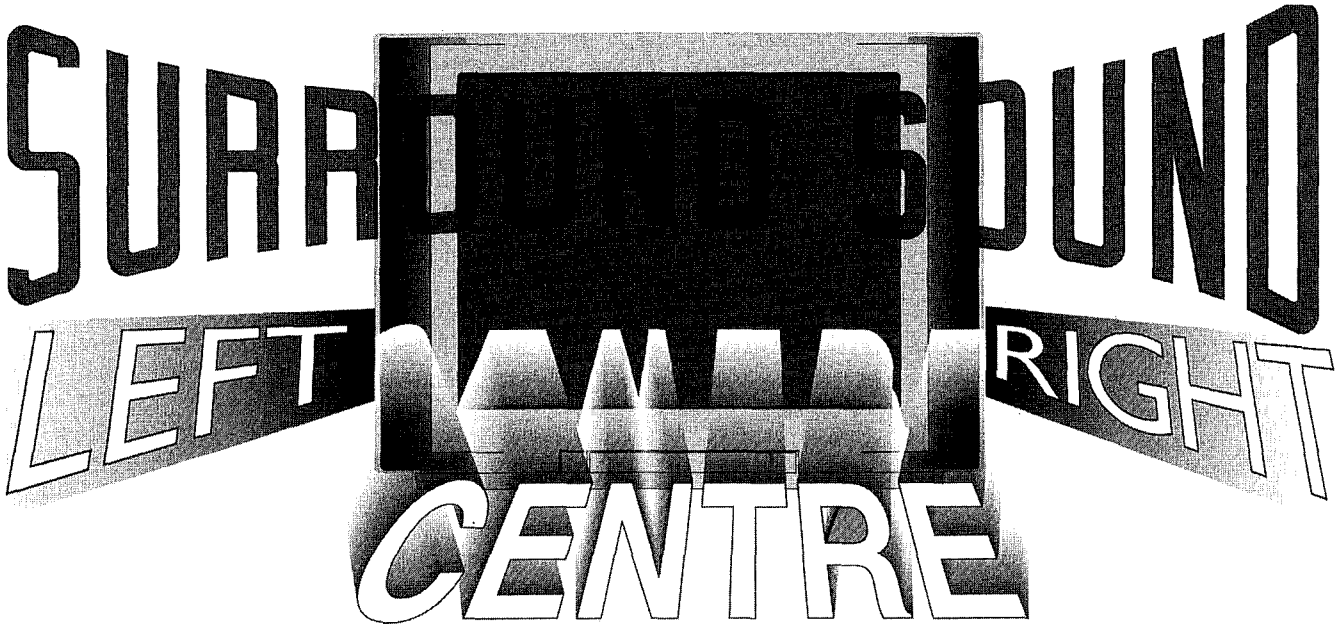
NOTE: The balance control is disabled whilst in Dolby® Pro Logic *and* Dolby® Pro Logic Theatre *modes*

BASS BOOST: When selected a ✓ is displayed.

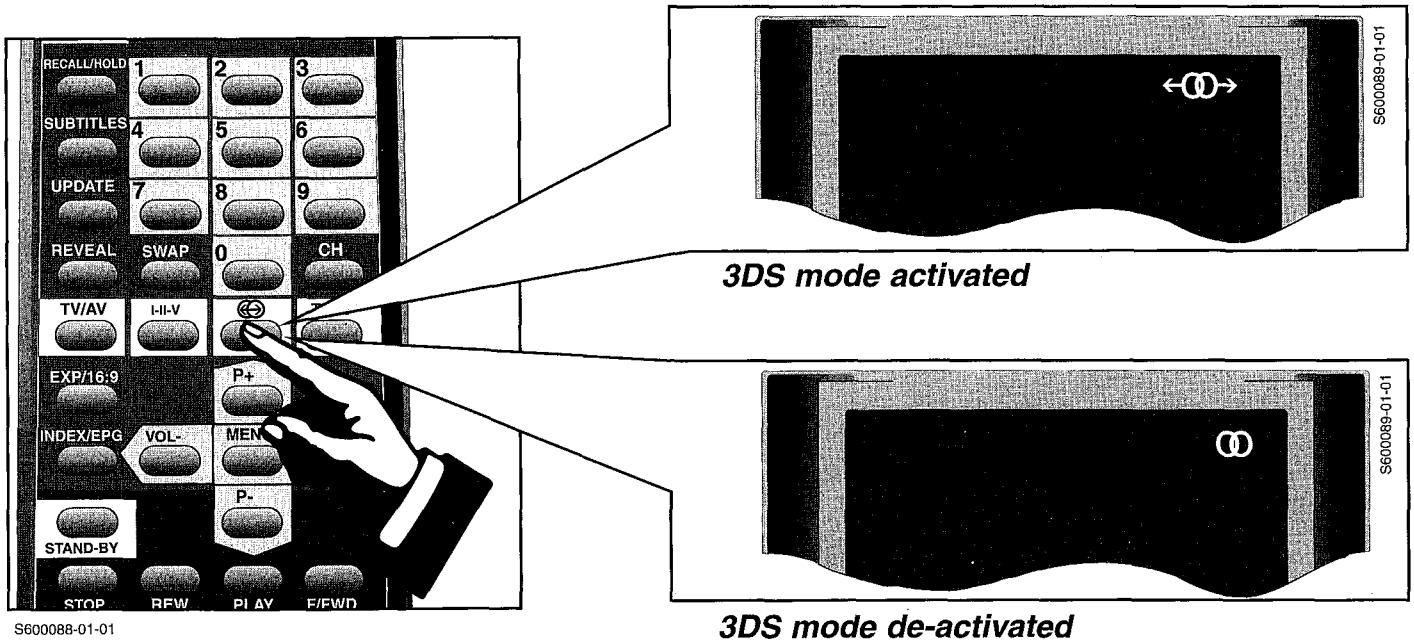
INTERNAL SPEAKER OPTION

Through innovative design and complex internal circuitry, HITACHI have produced this television which recreates superb Dolby Pro Logic cinematic sound. However, to enhance your viewing pleasure when using only the TV's own internal speakers, we have created the 3DS system (3 Dimensional Spatial sound). The 3DS system gives a much wider spread of sound from the TV giving the impression of sound coming from the sides of the room rather than the in built speakers, whilst the important centre dialogue channel is unaltered, still appearing to come from the centre of the screen.

S600087-01-01



Activating the 3DS sound spatializer is simple, press the button marked ⟲⟳ on the handset to activate, one press more will de-activate. When activated a ←OO→ symbol appears in the top right hand corner of the screen indicating that 3DS is on. When de-activated the OO symbol is displayed on-screen (see below).



S600088-01-01

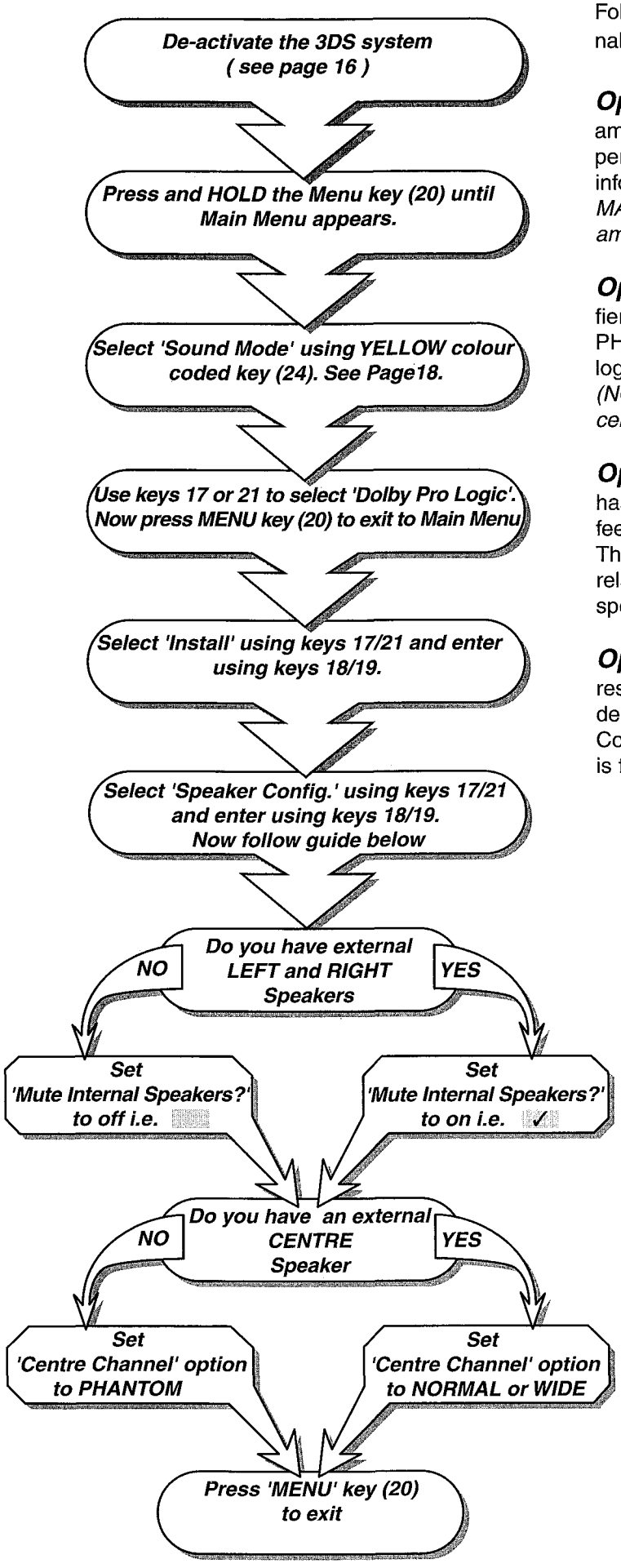
3DS mode activated

3DS mode de-activated

NOTE: In order to appreciate the effect of 3DS it is essential that you are listening to at least a stereophonic program with active left or right information. For example, certain programs containing only speech will appear to have no effect when 3DS mode is selected.

Speaker Configuration Menu

The Speaker Configuration menu allows the user to access various centre speaker modes. This is particularly useful if an external amplifier is connected to the Centre PHONO Socket. In addition to these options, you may want to replace the TV's internal speaker sound to a full external amplified speaker setup. In this case the user can mute the TV's speakers from within the Speaker Configuration Menu, allowing sound only to be heard through the external amplified sound sources. Follow the step by step guide below:


De-activate the 3DS system
(see page 16)
Press and HOLD the Menu key (20) until Main Menu appears.
Select 'Sound Mode' using YELLOW colour coded key (24). See Page18.
Use keys 17 or 21 to select 'Dolby Pro Logic'. Now press MENU key (20) to exit to Main Menu
Select 'Install' using keys 17/21 and enter using keys 18/19.
Select 'Speaker Config.' using keys 17/21 and enter using keys 18/19. Now follow guide below
Do you have external LEFT and RIGHT Speakers
NO
YES
Set 'Mute Internal Speakers?' to off i.e.
Set 'Mute Internal Speakers?' to on i.e. ✓
Do you have an external CENTRE Speaker
NO
YES
Set 'Centre Channel' option to PHANTOM
Set 'Centre Channel' option to NORMAL or WIDE
Press 'MENU' key (20) to exit

Follow the guide below describing options with and without external amplifiers connected:

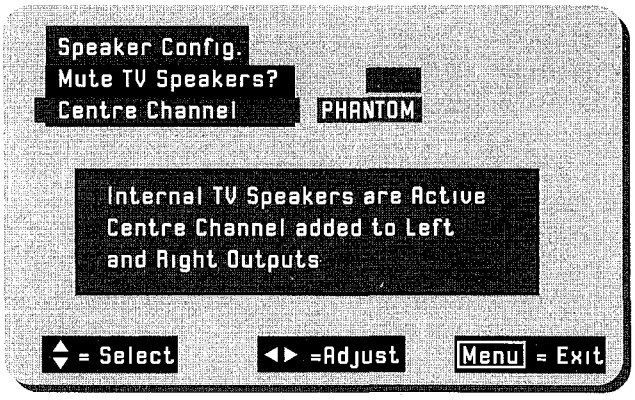
Option 1: (PHANTOM) If you do not have any external amplifiers connected to the TV then select the PHANTOM mode permanently. Phantom allows the TV to create centre dialogue information using the TV's left and right internal speakers. *(NORMAL and WIDE have no effect when there are no external centre amplifiers connected [See Notes below]).*

Option 2: (PHANTOM) If there are external surround amplifiers connected but no centre amplifier connected, then select PHANTOM mode. This again allows the TV to create centre dialogue information using the left and right internal speakers. *(NORMAL and WIDE have no effect when there are no external centre amplifiers connected [See Notes below]).*

Option 3: (NORMAL) In option 3, it is presumed the user has a limited bass response centre amplifier connected. If you feel that this best describes your setup then select NORMAL. This mode will anchor dialogue to your centre amplifier whilst relaying bass response through the TV's internal left and right speakers *[See Note below].*

Option 4: (WIDE) This option assumes there is a good bass response centre amplifier connected to your TV. If this option describes your setup then select WIDE from the Speaker Configuration Menu. In this mode all bass response and dialogue is fed to the centre amplifier *[See Notes below].*

S600071-01-01



Speaker Configuration Menu - note the displayed information window, this briefly describes the mode you have selected.

PLEASE NOTE:
In 2 speaker mode i.e. using only internal TV speakers with 3DS activated, the CENTRE channel option will display PHANTOM and cannot be changed to any other mode.
Whilst in HALL or STEREO modes the 'Centre Channel' option displays 'OFF', and also cannot be changed to any other mode.

Sound Mode Menu

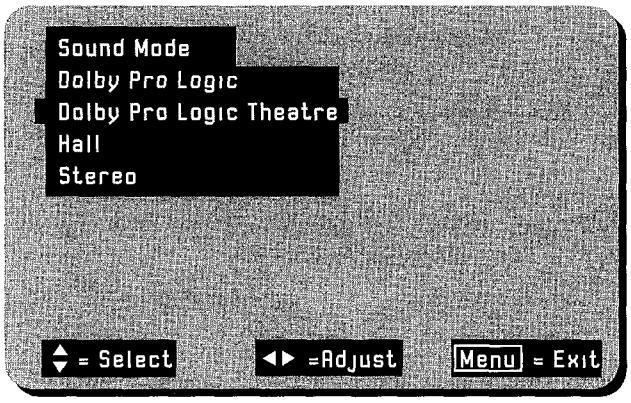
The Sound Mode selection menu allows the user to select between various sound effects. These effects enhance your viewing pleasure, particularly when viewing movies, sports events and concerts etc.. The guide below provides a description of the Sound Modes and what mode is suggested for viewing particular programs.

Press the MENU key (20) on your handset and then press the YELLOW colour coded key (24)

The 'Sound Mode' menu is shown. Select the desired mode using cursor key's 17 or 21.

After selecting the desired Sound Mode, exit to TV mode by repeatedly pressing MENU key (20).

S600068-01-01



DOLBY PRO LOGIC (Internal Speaker Mode)

In this mode virtual surround sound can be created using just the TV's internal speakers. Activate 3DS to enable virtual surround ound. This mode is also particularly suitable for films and programmes that display the DOLBY SURROUND caption. (This mode is recommended for the majority of TV viewing).

DOLBY PRO LOGIC (External Surround Amplifier Mode)

In this mode full cinematic sound is achieved using the TVs internal circuitry, combined with your choice of external surround sound amplifier and speakers. (Please Note: The 3DS system should be de-activated for this mode [see page 16]).
This mode is particularly suited to action movies and dramas that display the DOLBY SURROUND caption.

DOLBY PRO LOGIC (Theatre)

This mode creates a larger sound field for those programmes that have little surround sound content. It is particularly effective when used in conjunction with external surround amplifiers, however, if you are using the TV internal speakers only, activating the 3DS system will also provide a pleasing aural sound.

HALL (External Surround Amplifier Mode)

HALL mode creates an ambient sound effect, especially when viewing mono broadcasts. Again this mode is very effective when used in conjunction with external surround amplifiers. Activate the 3DS mode whilst using the TV's internal speakers to obtain equally pleasing sound from your TV.
Select this mode when viewing classic films or drama events, which were recorded in mono.

STEREO

When STEREO mode is selected, the TV produces high quality stereo sound. *Select this mode when viewing general TV programs and films.(3DS sound can be activated in this mode to provide a much wider stereo image).*

NOTE:

1. ***Dolby Pro Logic can only be achieved by the addition of an external surround sound amplifier and speaker system. These are available from your HITACHI dealer.***
2. ***Activating 3DS whilst using external surround amplifiers will cause the external surround channels to mute.***
3. ***Activating and de-activating 3DS can only be achieved whilst no menus are on-screen (see page 16).***

Surround Setup Menu

At Hitachi we appreciate the fact that not all living area's are the same, therefore the Surround Setup menu allows the user to balance the sound by adjusting the volume level to each channel, thus accommodating various room layouts.
In addition to this the menu also has a Surround Delay mode, this enables the viewer to select the optimum surround sound delay depending on your seating position relative to the TV (not available when 3DS is active).
Please note that the Surround Set-up menu is only available in **Dolby® Pro Logic** *and* **Dolby® Pro Logic Theatre** *modes,* and thus will automatically default to **Dolby® Pro Logic** *when selected.*

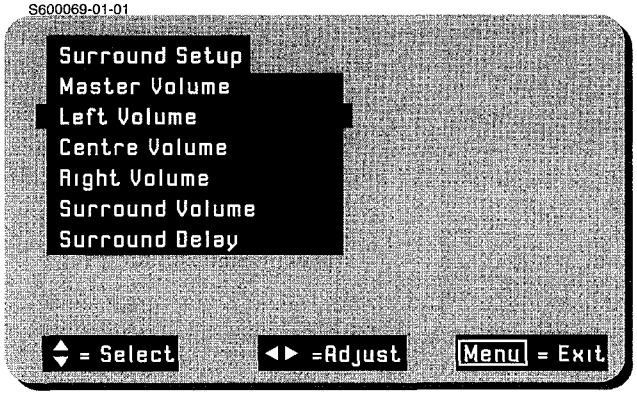
NOTE: *When the SET-UP menu begins, the TVs sound is replaced with a noise signal. This is easier to balance than normal TV sound, and will cycle between the centre, left, right and surround channels (the centre channel cannot be adjusted unless an external amplifier for the centre channel is connected and is adjusted from PHANTOM to WIDE or NORMAL modes in the 'Speaker Config.' menu). If 3DS is active the surround PHONO output becomes muted.*

Press and HOLD the menu key (20). Use cursor keys 17 or 21 to select INSTALL.

Enter the INSTALL menu using keys 18 or 19 and select Surround Setup with keys17 or 21

Exit to TV mode by repeatedly pressing the MENU key (20) on your handset.

S600069-01-01



When the TV automatically cycles through the various sound channels, we suggest that you listen to the TV sound for a few moments before adjusting any of the channels. By doing this you may be able to determine which channel needs adjusting. Once you have adjusted the selected level, leave the TV cycle through the Set-up menu a few times more, this will then determine whether you have applied the correct amount of volume level to the selected sound channel.

Surround Delay

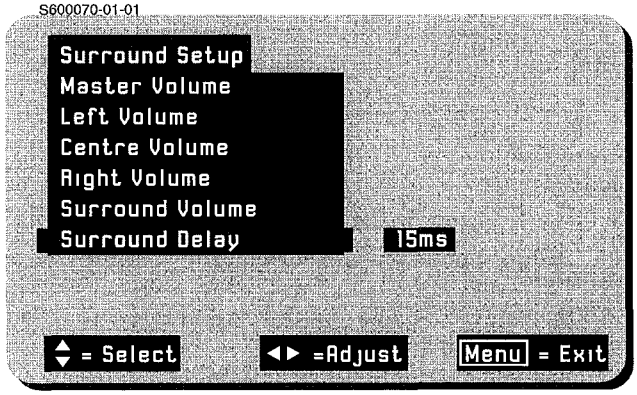
The Surround Delay mode enables the viewer to set the optimum surround sound delay from the TV. There are three levels to select and these are dependant on how close your viewing position is to the TV. Each setting is displayed as a millisecond value (ms) and are configured as 15ms, 20ms and 25ms. If you feel that your seating position is relatively close to the TV (example 1 below), then set the Surround Delay to 15ms. The 20ms setting should be used if you believe your seating position is midway between the TV and the rear sound source (example 2 below). Set the Surround Setup to 25ms if the seating position is relatively close to the rear sound source (example 3 below). Setting these modes is explained below. ***Please note that 3DS should be de-activated before the Surround Delay mode is set.***

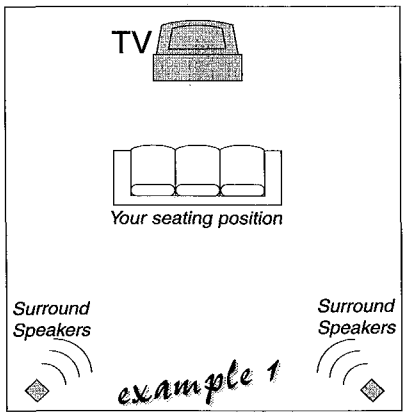
Enter the Surround Setup Menu as described above and select Surround Delay (keys 17/21)

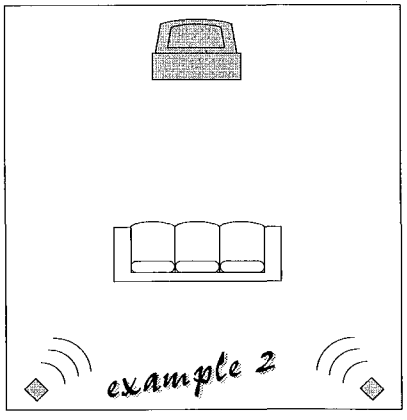
Use cursor keys18 or 19 to select between 15, 20 and 25ms.

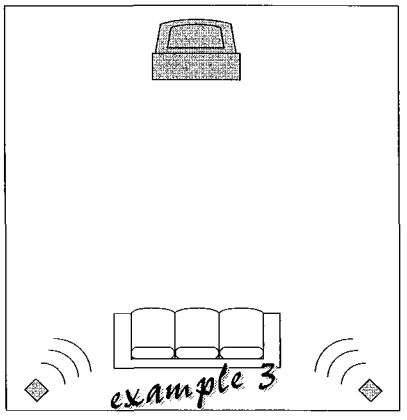
Repeatedly press the MENU key (20) to exit.

S600070-01-01









Connecting External Audio Equipment

If desired you may want to customise your TV by adding external surround speakers. This TV will accommodate external surround speaker systems via external sockets on the rear of the TV. The addition of external surround speakers will enhance your viewing and listening pleasure even further, and we strongly recommend you purchase HITACHI systems to compliment your HITACHI TV (contact your dealer for advice). The illustrations (below) will guide you on the correct installation and settings for external surround speaker set-ups.If you decide to purchase additional amplifiers and speakers then please follow these simple guidelines listed below:

1. If you have purchased just 2 amplifiers and speakers then these are best installed as rear surround speakers, as the TV will use its own internal speakers to create the front left, right and centre channels.
2. Please ensure that you purchase and install the correct rated range of amplifier and speaker for the TV - (front-centre speakers 10Watt or greater) and (rear surround 5Watt or greater). Your HITACHI dealer can advise you on the correct amplifier and speaker choice for your TV.

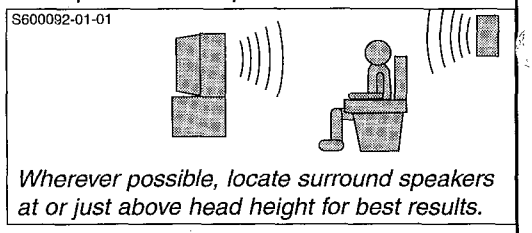
! IMPORTANT ! ***The 18V power output socket on the rear of this TV is specifically designed for Hitachi Accessories. Under no circumstances connect any other accessory to this socket, as this could cause serious irreparable damage to your equipment. Before attempting to connect any external equipment, ensure that the TV is switched OFF.***

OPTION 1

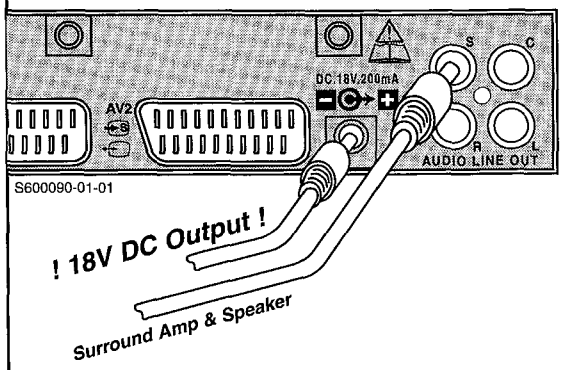
Option 1 describes and illustrates the connection of Rear Surround Amplifiers & Speakers.

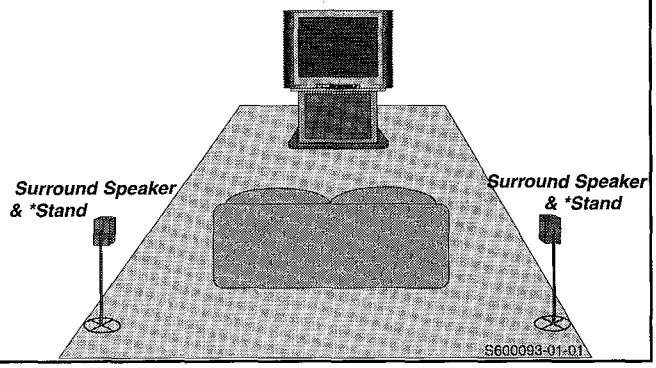
1. Switch off TV.
2. Connect Surround speakers as shown and position as indicated in the illustrations below.
3. Switch TV on.
4. Follow instructions on Page 17 to obtain ***Speaker Configuration Option****, and ensure Internal Speakers ARE NOT muted i.e ( ), also set Centre Channel to PHANTOM.*
5. Use the Surround Set-up Menu (Page 19) to adjust the volume level on the Surround Speakers if required.

The TV uses internal speakers to provide left and right channels, and also creates its own centre channel. The rear surround speakers enhance your listening pleasure.



Wherever possible, locate surround speakers at or just above head height for best results.



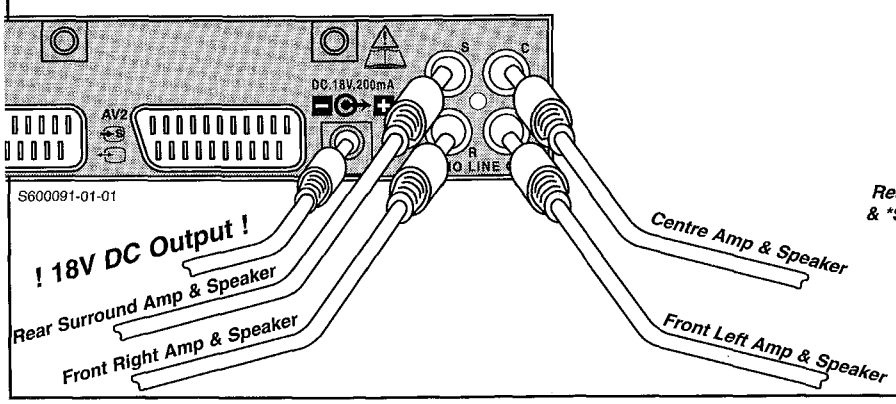


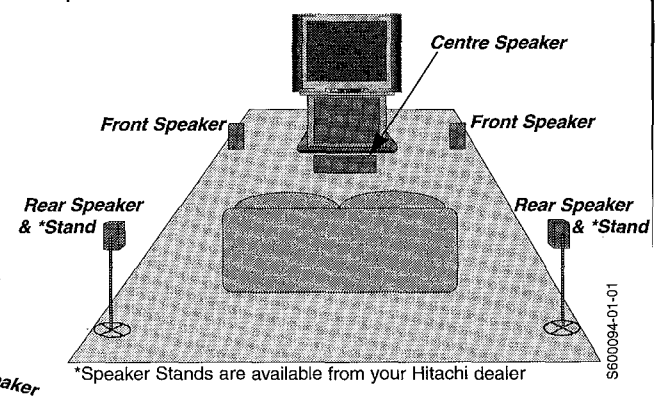
OPTION 2

Option 2 describes and illustrates the connection of Rear, Front and Centre Surround Amplifiers & Speakers.

1. Switch off TV.
2. Connect Surround , Left, Right and Centre speakers as shown and position closely to illustration below.
3. Switch TV on.
4. De-activate 3DS and follow instructions on Page 17 to obtain ***Speaker Configuration Option****, and ensure Internal Speakers ARE muted i.e. (✓), also set Centre Channel to WIDE or NORMAL.*
5. Use the Surround Set-up Menu (Page 19) to adjust the volume level on the Surround Speakers and Centre speaker if required.

In this configuration full Dolby Pro Logic Sound is achieved using 5 external speakers.





*Speaker Stands are available from your Hitachi dealer

Solid Background

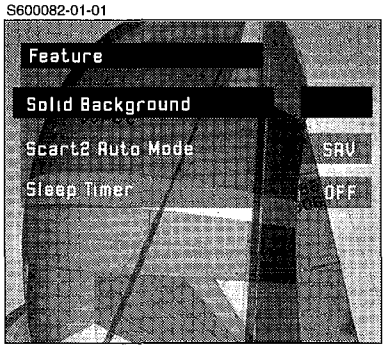
The Solid Background feature controls the appearance of the OSD (On Screen Display) window environment, with either a solid or transparent appearance to the OSD. There are two modes to select from and these are simply ON and OFF. Follow the guide below.

Press the MENU key (20) on your handset. The Main Menu is displayed.

Use BLUE colour coded key (22) to select FEATURE
(or use cursor keys 17/21 to select and cursor key 18 or 19 to enter)

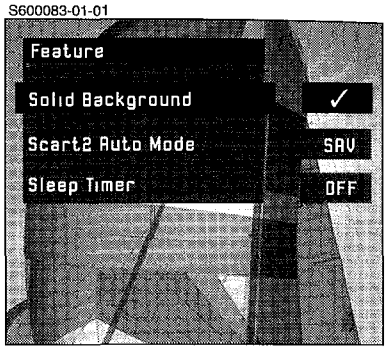
Select Solid Background and adjust the controls ON or OFF with cursor keys 18 and 19.

S600082-01-01



With Solid Background deselected the OSD window becomes transparent, allowing you to view the TV picture behind the OSD.

S600083-01-01



With Solid Background selected the OSD window becomes solid.

Scart2 Auto Mode

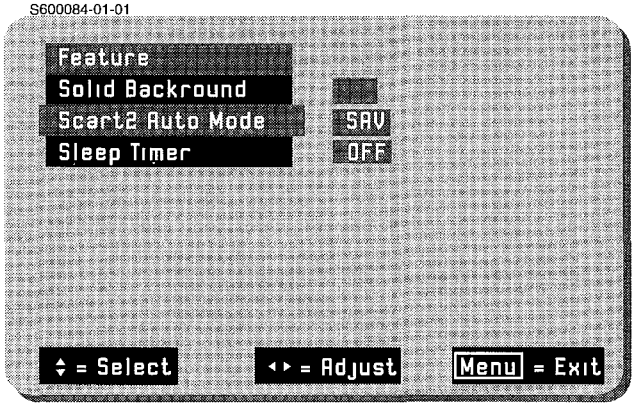
This feature is used to set the condition of Scart 2 Audio/Video input socket. If, for example, you regularly connect external equipment such as S-VHS (Super VHS) Video recorders or camcorders to AV2, then the TV can be set to SAV mode to accommodate such equipment. Standard AV mode can also be set if desired.

Press the MENU key (20) on your handset. The Main Menu is displayed.

Use BLUE colour coded key (22) to select FEATURE
(or use cursor keys 17/21 to select and cursor key 18 or 19 to enter)

Select Scart2 Auto Mode and adjust the controls between AV and SAV with cursor keys 18 and 19.

S600084-01-01



Sleep Timer Function

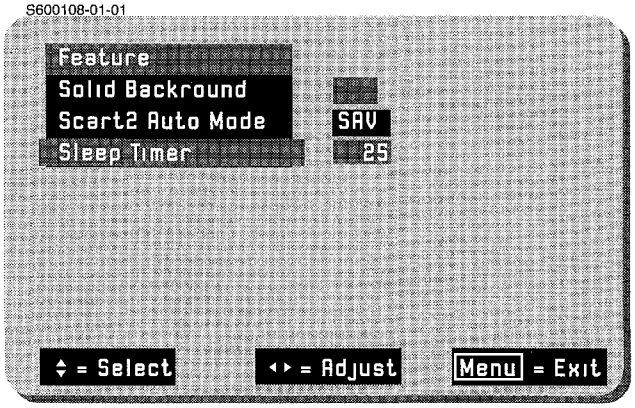
The Feature Menu also incorporates a Sleep Timer Facility. This allows the user to input a set amount of time before the TV automatically shuts down in to Stand by mode. The amount of time is input in 5 minute intervals, to a maximum of 120 minutes (2 hours). When there is only 60 seconds remaining a countdown appears in the top right hand corner of the screen.

Press the MENU key (20) on your handset. The Main Menu is displayed.

Use BLUE colour coded key (22) to select FEATURE
(or use cursor keys 17/21 to select and cursor key 18 or 19 to enter)

Select Sleep Timer and enter the time value with cursor keys 18 and 19.

S600108-01-01

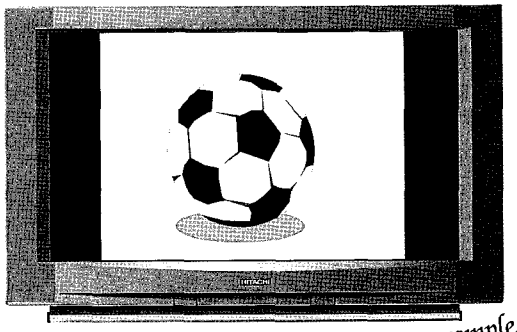


An example of the Sleep Timer function with 25 minutes entered is shown.

NOTE: *In addition to the Sleep Timer function, if the TV does not receive a signal for a period of 10 minutes the TV will automatically power down into Stand by mode.*

Wide Screen Modes

The various screen modes below and on page 19 are available on this model. Each of these modes are accessed using the 16:9 button (3) on your handset

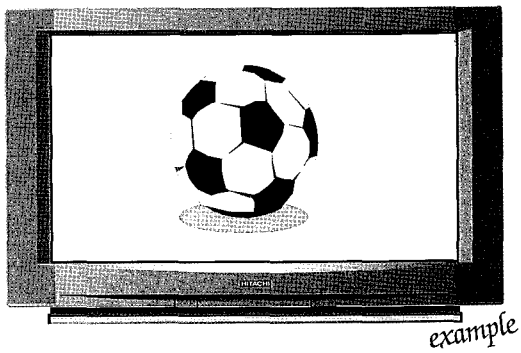


example 1

AUTO

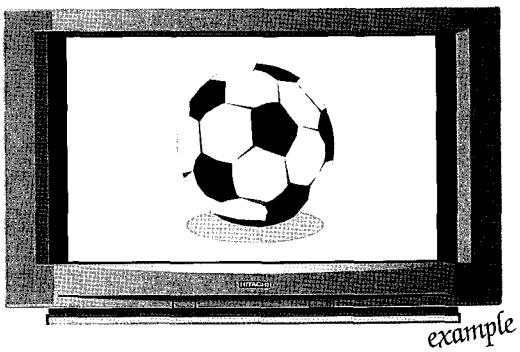
Auto mode automatically detects various screen formats that are transmitted in either conventional (4:3) or wide screen (16:9/14:9). After detecting which signal is being transmitted the TV will automatically switch to the correct screen ratio.

In example 1 (left) a 4:3 conventional picture format is shown, note the black bars to the sides of the screen, this is consistent with screen compression. 4:3 mode can also be manually selected if desired.



example 2

Example 2 (left) illustrates a 16:9 Wide Screen picture format. This type of picture fills the entire TV screen. The 16:9 mode can also be manually selected if desired.



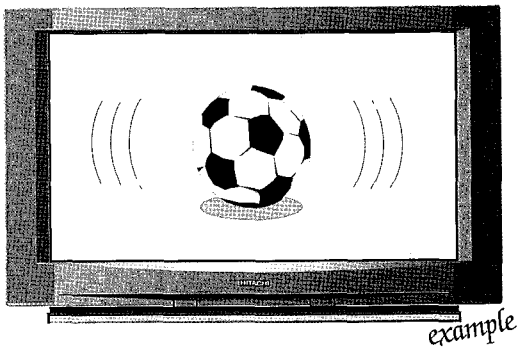
example 3

AUTO mode can also detect 14:9 ratio signals, when this mode has been selected thin black bars appear to the sides of the screen (example 3).

NOTE: Other screen formats may be transmitted by certain broadcasters, these are 14 x 9 True Wide Screen and 16 x 9L/14 x 9L with subtitles. Your TV is able to detect these formats and adjust the set automatically *(subject to WSS transmitting).

Hitachi recommend that AUTO is selected for the majority of TV viewing.

*NOTES: The function of the AUTO mode is dependent on whether the *Wide Screen Signalling (WSS) is transmitting, check with your local operator for availability.*
When WSS is not active the picture mode will default to the Feature settings (see page 19)



example 4

PANORAMIC

Panoramic mode emulates that of a Wide Screen broadcast for 4 x 3 transmissions. This is achieved by maintaining the proportions of the centre of the screen while extending the images on the sides of the screen (example 4).
This mode is generally recommended if AUTO is not selected.

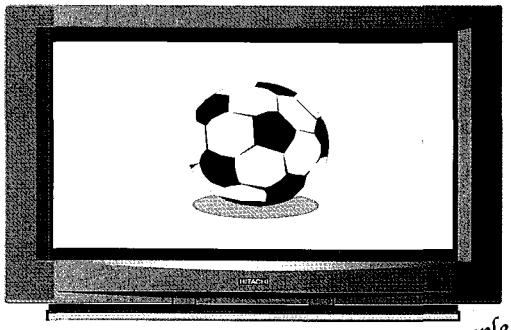
MANUAL SETTINGS Some modes can also be manually selected if some pictures appear distorted or stretched, or subtitle information becomes lost. Follow the guide below to apply the correct setting.

example 5

16 x 9L

The 16:9 Letterbox mode is used to expand a 16:9 letterbox style picture so that it uses the full screen to display the picture. Letterbox type pictures are identifiable by the black bars that appear on the top and bottom of the screen and some objects appear stretched (see example 5). Once selected, the 16:9L mode displays the picture as example 2 on page 18.

14 x 9L



example 6

When viewing pictures in the 14:9 Letterbox mode (example 6) thin black bars appear at the top and bottom of the screen, and images become slightly elongated. By selecting 14:9L mode the user can expand the TV picture to display more of the screen (see example 3).

example 7

If viewing movies or programmes containing screen subtitles whilst in 16 x 9L or 14 x 9L modes, the subtitle may become lost to the bottom of the screen. To overcome this problem, simply press the SUBTITLE button (5) once.The SUBTITLE feature compresses the bottom of the screen allowing the subtitles to be viewed, as in example 7. If, however, you wish to view Teletext subtitles a further press of the SUBTITLE button is required, this will then restore the screen to it's original setting.

NOTE: Whatever Wide Screen mode was set before the TV is switched off will be the same condition when it is switched back on.

The references to the Wide Screen modes are purely for guidance purposes only, your preferences may vary to those listed.